



Appl. No. 09 904,224
Case Docket No. CHR 00-63
Reply to Office action of April 18, 2003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 09/904,224 Confirmation No.: 9688
Applicants : Sukun (NMN) Zhang, Warunee S. Sisson, J. George Hayden,
Charles A. Rumble, and Marc S. Moisa
Filed : July 12, 2001
TC/A.U. : 1711
Examiner : Olga Asniovsky

Docket No. : CHR 00-63
Customer No. : 36876

For : Waterborne Polymer Compositions

Honorable Commissioner of
Patents and Trademarks
Washington, DC 20231

DECLARATION UNDER 37 C.F.R. §1.132

I, G. Frederick Hutter, declare as follows:

1. THAT I received my B.A. degree in chemistry from Rutgers University, New Brunswick, New Jersey, in 1971 and my M.S. and Ph.D. degrees in chemistry from Seton Hall University, South Orange, New Jersey, in 1974 and 1985, respectively. From 1969 to 1986, I was employed with BASF, Clifton, New Jersey, as a Research Chemist. From 1986 to present, I have been employed with Westvaco Corporation's Charleston Technical Center, North Charleston, South Carolina, and currently hold the position of Senior Research Chemist specializing in ink and coating development.

2. THAT I am familiar with the art and science of polymer chemistry and ink

3. THAT I am familiar with the above-described patent application and the teachings contained therein.

The applicants teach reacting fatty acid in an emulsion polymerization reaction to produce their aqueous polymer composition. One skilled in the art would understand that the emulsion polymerization reaction of the fatty acid is a key factor in producing the chemical characteristics of the applicants' aqueous polymer compositions.

A skilled artisan would recognize that applicants' aqueous polymer compositions do not undergo decarboxylation due to the inherent stability of their molecular structures.

4. THAT I am familiar with referenced U.S. Patent No. 4,894,397 to Morgan et al.

One skilled in the art would understand that fatty acids and polyethylene waxes are very dissimilar chemical compositions. The fatty acids taught by the applicants are comparatively short-chained molecules which have relatively low molecular weights. In contrast, polyethylene waxes are polymers that have relatively long-chained molecular structures. Polyethylene waxes are much less polar and have significantly higher molecular weights when compared to the fatty acids taught by the applicants. Due to these functionality dissimilarities and molecular weight differences a skilled artisan would recognize that fatty acids and polyethylene waxes exhibit very different physical and performance properties.

Morgan et al. teaches the addition of polyethylene wax to his emulsion polymer in order to formulate a high gloss floor polish. This addition produces a mixture of emulsion polymer and polyethylene wax. The patent does not teach or suggest any type of chemical reaction between the emulsion polymer and polyethylene wax. In contrast, the applicants teach reacting fatty acid in an emulsion polymerization reaction in order to produce their aqueous polymer composition.

One skilled in the art would understand that Morgan et al. adds the polyethylene waxes as slip agents in order to increase the resistance of their high gloss floor polish formulation to marking, abrasion, and scuffing, as it is well known in the art to employ

polyethylene waxes to impart water resistance properties.

5. THAT I am familiar with referenced U.S. Patent No. 4,371,669 to Mylonakis et al.

One skilled in the art would understand that the carboxy functional, addition copolymers taught and claimed by Mylonakis et al. differ significantly from the aqueous polymer compositions taught and claimed by the applicants. The polymeric monomers taught by the patent must undergo decarboxylation in order to obtain improved resistance to aqueous liquids. This is fundamentally different from the aqueous polymer compositions taught in the application, which do not undergo decarboxylation due to the inherent stability of their molecular structures.

A skilled artisan would recognize that in Example 3 the patent teaches reacting the epoxy resin and the tall oil fatty acids in an esterification reaction (which would result in the tall oil fatty acids no longer containing carboxyl groups). In contrast, the application teaches the reaction of fatty acids in an emulsion polymerization reaction. These different reaction mechanisms produce significantly different reaction products having appreciably different chemical properties.

The use of fatty acid esters of epoxy resins as adhesion promoters in metal primer coatings is well known in the art. One skilled in the art would understand that Mylonakis et al. is teaching in Example 3 the addition and reaction of tall oil fatty acid to enhance the adhesion of the coating formulation to the zinc phosphate treated steel test panels used in the Example – not as an additive to improve water resistance.

6. THAT the undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.



Frederick Hutter